

WHAT IS CLAIMED IS:

1. A current-perpendicular-to-the-plane structure magnetoresistive element comprising:

a lower portion of a magnetoresistive film extending over a surface of a lower electrode layer by a first width in a lateral direction;

an upper portion of the magnetoresistive film extending over a surface of the lower portion by a second width smaller than the first width in the lateral direction;

insulators sandwiching the upper portion of the magnetoresistive film in the lateral direction;

domain control magnetic layers sandwiching the upper portion of the magnetoresistive film and the insulators in the lateral direction; and

an upper electrode layer contacting the upper portion of the magnetoresistive film.

2. The current-perpendicular-to-the-plane structure magnetoresistive element according to claim 1, wherein said insulator is a magnetic.

3. The current-perpendicular-to-the-plane structure magnetoresistive element according to claim 1, wherein said upper portion of the magnetoresistive film includes a free magnetic layer.

4. A method of making a current-perpendicular-to-the-plane structure magnetoresistive element, comprising:

forming a magnetoresistive film on a surface of a lower electrode layer;

forming a pair of domain control magnetic layers

sandwiching the magnetoresistive film;

forming an insulator film covering over the domain control magnetic layers; and

subjecting an upper surface of the magnetoresistive film to an etching process.

5. The method according to claim 4, wherein said insulator film remains on the domain control magnetic layers after the etching process.

6. The method according to claim 5, wherein grooves are formed between the magnetoresistive film and the respective domain control magnetic layers based on the etching process.

7. The method according to claim 6, wherein an insulator is filled in the groove.

8. The method according to claim 7, wherein said magnetoresistive film includes a free magnetic layer located between the insulators.

9. The method according to claim 8, wherein said insulator is a magnetic.